Do Intangible Assets Explain High U.S. Foreign Investment Returns?
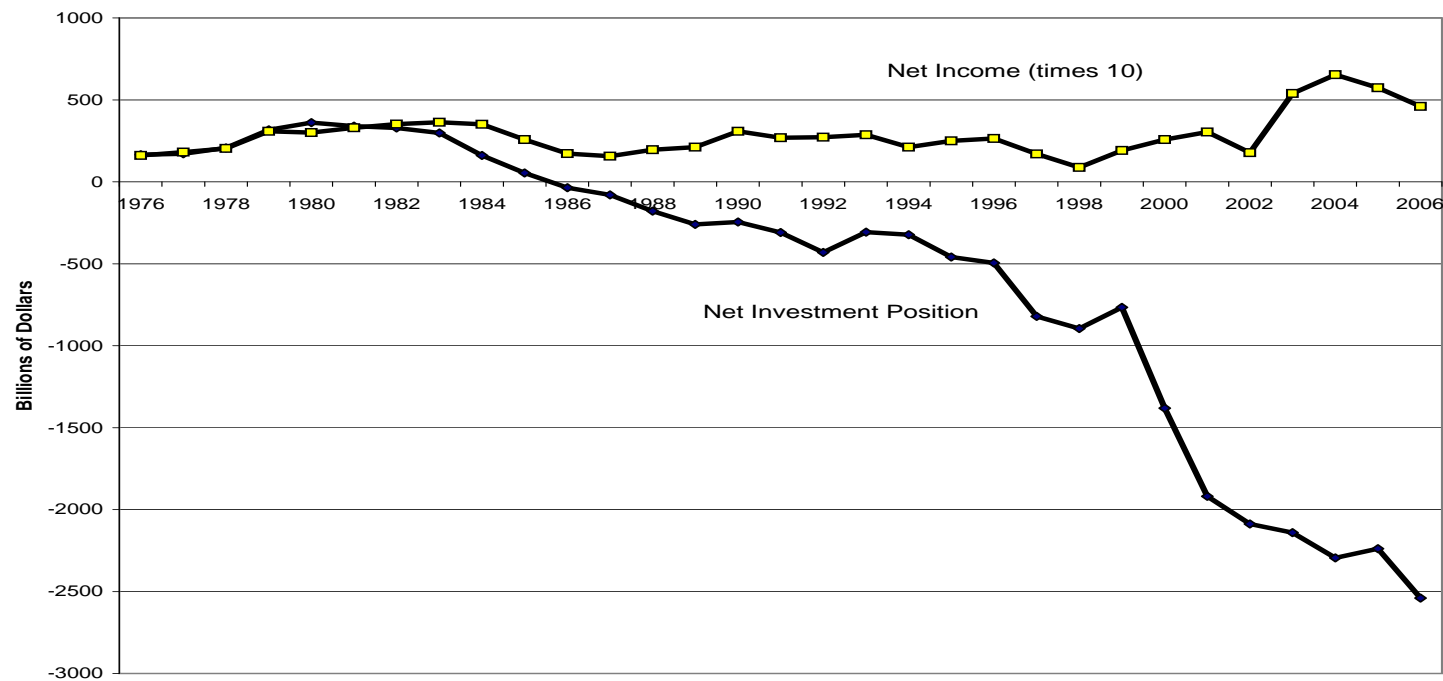
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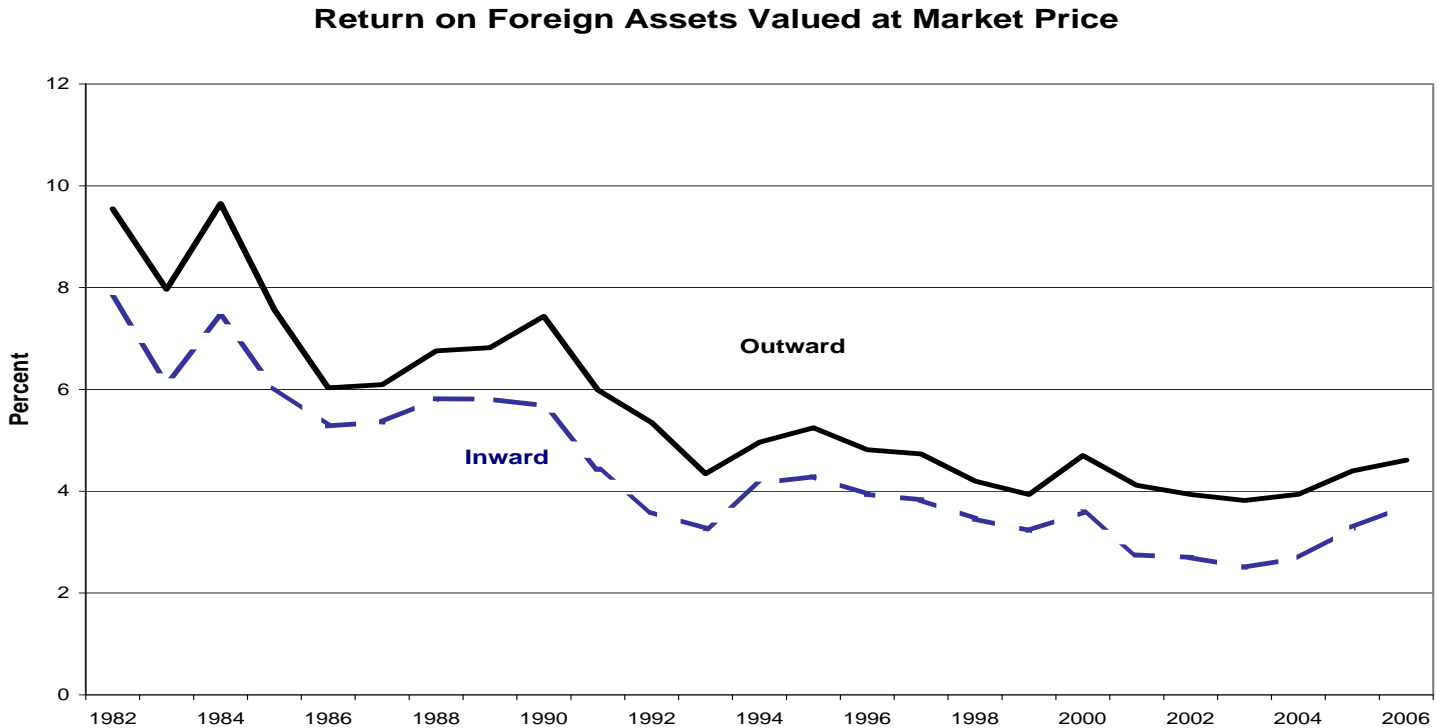
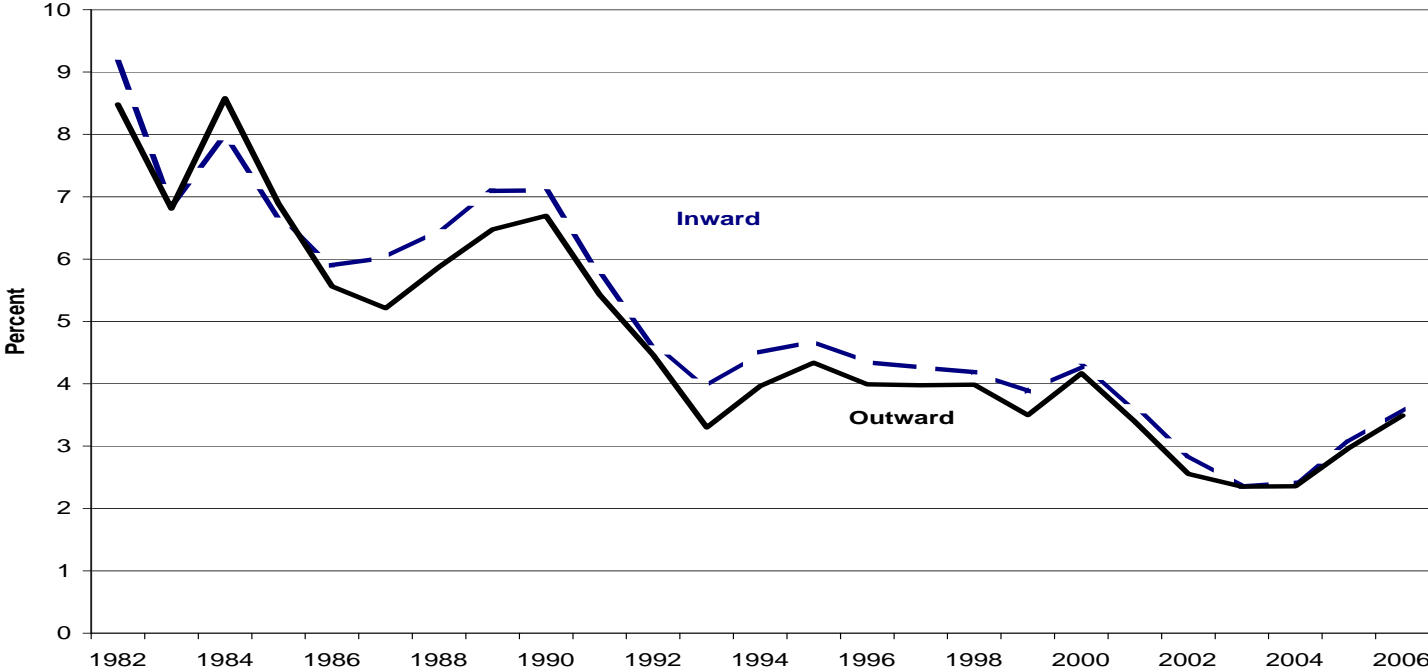# Puzzle: U.S. net investment position negative while net earnings positive.

The "Explanation": Returns on outward (from U.S.) foreign investment higher than inward return.

Return on Foreign Assets Valued at Market Price

Gap Due to FDI (1): Non-FDI Return on Assets
(Less than 10% firm ownership)

Gap Due to FDI (2): FDI Return on Assets
(Greater than/equal 10% firm ownership)
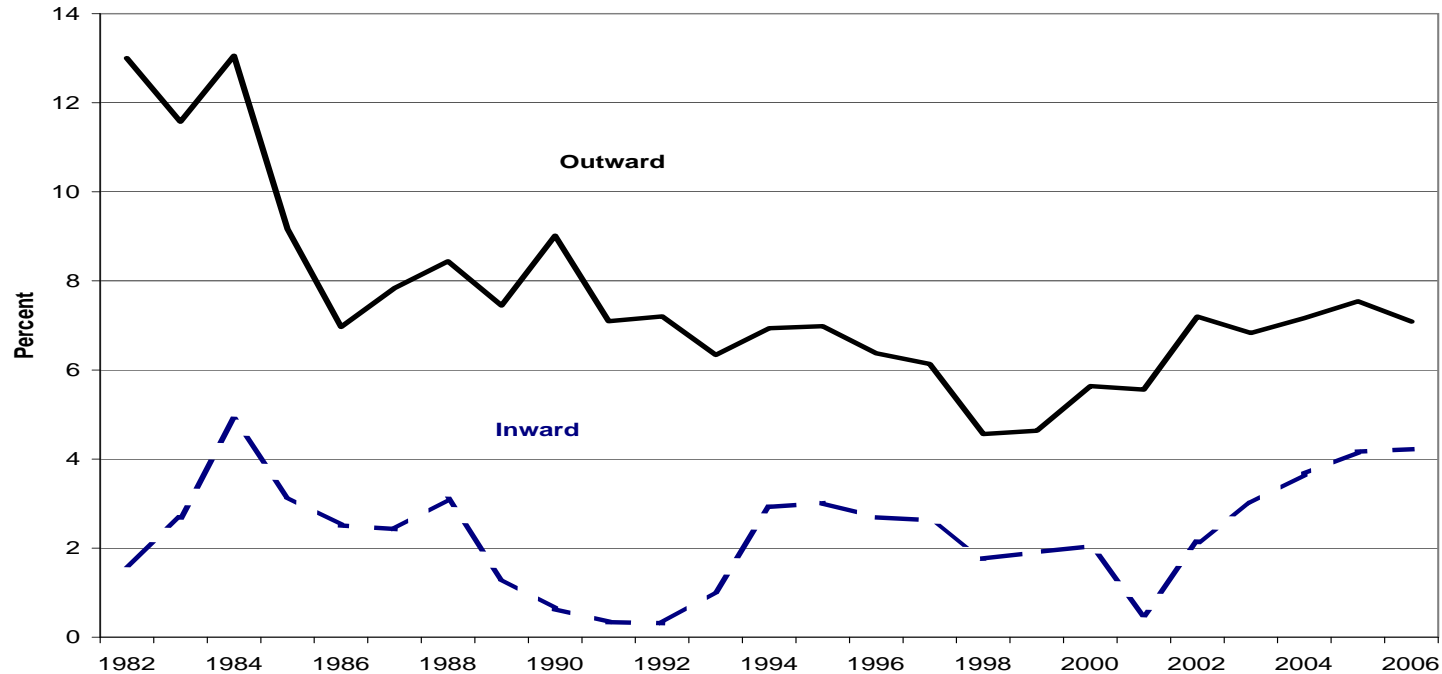
Paper Outline

- Examine degree to which intangible assets held by firms can account for return gap.

- Use McGrattan-Prescott (2005) growth accounting framework to estimate intangible assets and adjust rates of return.

- Results:

  1. Intangible assets may be an important source of gap.
     - Corporate income taxes encourage intangible investment.
     - U.S. MNC taxes relatively high.

  2. BOP measures do not include all tax payments on foreign income.

Why is FDI Different?

- Most assets do not have market price, must be imputed.

- NIPAs do not currently capitalize most intangible assets.

- Many intangible assets not included in FDI measure.

- Portfolio investment prices *will* reflect underlying intangible assets.

Why Look at Intangibles?

- Specific to FDI:
  - Many explanations (risk compensation, "Exorbitant Privilege") apply to portfolio assets, which do not have gap.

- Not specific to United States:
  - Other countries have gaps: UK, Canada.

Model Basics

- One sector growth model with tangible and intangible capital, based on McGrattan-Prescott (2005).

- J countries with a representative household.

- Each HH i owns a multinational with affiliates in every country.

- Production: One sector growth model with tangible (measured) $K_j^{m,i}$ and intangible (unmeasured) capital $K_j^{u,i}$.

$$C_j^i + X_j^{m,i} + X_j^{u,i} = Y_j^i \leq (K_j^{m,i})^{\alpha_m}(K_j^{u,i})^{\alpha_u}(N_j^i)^{1-\alpha_m-\alpha_u}$$

- No capital mobility: All investment local.

Taxation

- After tax profits for MNC i:

$$\sum_j (1 - \tau_j - \tau_j^{i,f}) p_j [Y_j^i - \delta_m K_j^{m,i} - X_j^{u,i} - \frac{w_j^i}{p_j} N_j^i]$$

- τ_j: Foreign CIT.

- $\tau_j^{i,f}$: Domestic tax on profits in country j.

Taxes and Intangible Assets

- Corporate income taxes encourage intangible investment.
  $\rightarrow$ Intangible investment expensed.

- Solution to firm's problem implies:

$$1 - \tau_j^i - \tau_j^{i,f} = \frac{\dfrac{\alpha_u Y_j^i}{K_j^{u,i}} - \delta_u}{\dfrac{\alpha_m Y_j^i}{K_j^{m,i}} - \delta_m}$$

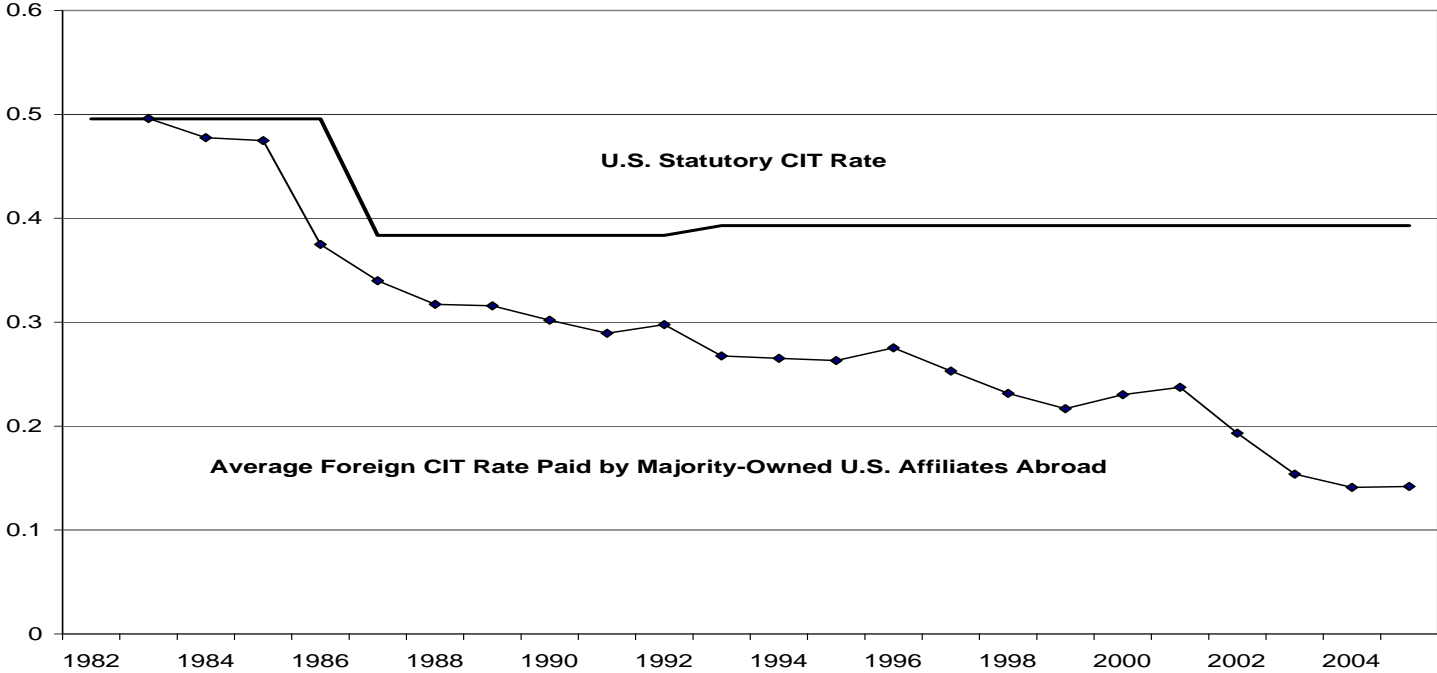- Solution requires lower $\dfrac{K_j^{m,i}}{K_j^{u,i}}$ with higher taxes.

MNC Taxes

- U.S. MNCs taxed on *worldwide* basis:
  Pay U.S. rate on foreign earnings, less foreign payments.

- Paid when profits repatriated.
  - Pay maximum of U.S./foreign rate.
  - U.S. has relatively high CIT rate.

- *Territorial* basis: Affiliates only pay local tax rate.

Corporate Income Taxes

Adjusting Rates of Return (1)

- Examine two sectors: Total inward, outward.

- Use ROA equalization, FDI data to estimate intangible-output ratio $\frac{K^u}{Y}$.

- Adjust ROA on FDI assets.

$$ROA_{Adj} = ROA \frac{K^m}{Y} \frac{Y}{K^m + K^u}$$

- Examine 1990-2001:
  - Avoids effects of American Jobs Creation Act (2004).
  - U.S. tax rates pretty constant.

Parameters

- Factor shares, depreciation: McGrattan and Prescott (2006).

- Taxes: Average U.S. statutory CIT, 1990-2001.

- $\frac{K^m}{Y}$: Net plant, property & equipment + inventories over value added.

Table 1: Baseline Parameters

α_m	α_u	δ_m	δ_u	τ
0.23	0.1	0.05	0.07	0.39

BOP and Worldwide Taxes

- BOP does not measure domestic taxes on repatriated income:
  $\rightarrow$ Purely domestic transaction.

- Some tax on foreign income recorded as parent's taxes.

- Increases measured foreign returns relative to model:

- Model:

$$(r_i^{m,i} - \delta_m)(1 - \tau_i^i) = (r_j^{m,i} - \delta_m)(1 - \tau_j^i - \tau_j^{i,f})$$

- Data:

$$(r_i^{m,i} - \delta_m)(1 - \tau_i^i) - \sum_j [\frac{K_j^{m,i}}{K_i^{m,i}} \tau_j^{i,f} (r_j^{m,i} - \delta_m)] \leq (r_j^{m,i} - \delta_m)(1 - \tau_j^i)$$

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Adjusting Rates of Return (2)

- Actual affiliate CIT paid: 24.9%

- Implied repatriation tax: 14.2%

- U.S. owned affiliate adjustment: Reduce ROA by repatriation tax.

- Foreign owned affiliates: No adjustment.
  - Most use territorial taxation.
  - UK has lower CIT rate.

Results

Table 2: Adjusting FDI Rates of Return, 1990-2001

	Inward	Outward
$\frac{K^u}{Y}$	0.9	0.7
$\frac{K^m}{Y}$	1.9	1.3
Unadjusted ROA	1.6%	6.3%
Intangible Adj. ROA	**1.1%**	**3.2%**
Repatriation & Intan. Adj. ROA	**1.1%**	**2.9%**

Adjusting Total Returns

- FDI asset share:
  - Inward: 26 percent.
  - Outward: 35 percent.

- Total ROA:
  - Inward: 3.7%. (Unadjusted: 3.9%)
  - Outward: 3.8%. (Unadjusted: 5.0%)

- Returns much closer once intangibles/repatriation taxes are accounted for.

Robustness: Alternative Intangibles Estimate

- McGrattan and Prescott (2005) solve for U.S. balanced growth path, 1990-2001.

- R&D expenditures: RD_j.

- Compare affiliate R&D expenditures with reference economy: U.S. Business Sector.

$$\frac{K_j^u}{Y_j} = \frac{K_{US}^u}{Y_{US}} \frac{RD_j}{Y_j} \frac{Y_{US}}{RD_{US}}$$

- Alternative adjusted FDI ROA:
  - Inward: 0.9 (Original Adj. ROA: 1.1).
  - Outward: 3.6 (Original Adj. ROA: 3.6).

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Conclusion

- Results indicate intangibles may be important part of ROA puzzle.

- Caveats:
  - Other factors (risk compensation, differing costs of funds, etc) may explain it.
  - Estimates very aggregated.
  - Controversy over how much repatriation taxes matter: retained earnings, financial engineering, etc.